

Table 5-2
Containment Area Alternative 2A Cost Estimate
Variable Multilayer Cap, Institutional Controls, Groundwater Containment, and Gas Monitoring
Investigation Area H1
Mare Island, Vallejo, California

	Quantity	Unit	Unit Price	Cost	Source/Subtotal	COMMENTS
Administration						
Home Office Administration and Support	1	LS	\$ 950,000	\$ 950,000	Engineer's Estimate	
Field Office Administration and Support	1	LS	\$ 2,370,000	\$ 2,370,000	Engineer's Estimate	
Engineering Design/Consulting	1	LS	\$ 2,750,000	\$ 2,750,000	Engineer's Estimate	
					\$ 6,070,000	
Mobilization						
Mobilization and Site Preparation	1	LS	\$ 35,000	\$ 35,000	Engineer's Estimate	20 equipment operators/site workers, per diem, vehicles and fuel
Equipment Staging	1	LS	\$ 90,000	\$ 90,000	Engineer's Estimate	20 equipment operators/site workers, per diem, vehicles and fuel Equipment for five phases of work.
					\$ 125,000	
Pre-Construction						
Background - Pre-Construction	1	LS	\$ 31,000	\$ 31,000	Engineer's Estimate	
Perimeter Air Monitoring - Construction	1	LS	\$ 145,000	\$ 145,000	Engineer's Estimate	
Erosion Control Measures	1	LS	\$ 53,000	\$ 53,000	Engineer's Estimate	
Initial Site Cleaning	75	AC	\$ 630	\$ 46,935	Engineer's Estimate	
Pre & Const Ops. Train, PPE, Med. Monitoring	1	LS	\$ 287,000	\$ 287,000	Engineer's Estimate	
					\$ 563,000	
Landfill Soil Foundation						
Subgrade Preparation (Labor)	660	HR	\$ 960	\$ 633,600	Engineer's Estimate	Crew rate based on 8 equipment operators/site workers
Subgrade Preparation (Equipment)	660	HR	\$ 544	\$ 359,040	Engineer's Estimate	Equipment rate based on 3 scrapers (CAT 623), compactor (CAT 815F), grader (CAT 14G), water truck and fuel
Subgrade Preparation (General Fill)	100,000	CY	\$ 3.50	\$ 350,000	Vendor Quote	Assumes 100,000 cubic yards for subgrade fill after hot spot consolidation
					\$ 1,343,000	

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RCRA Equivalent Subtitle C Landfill Cap Construction							
Gas Collection Layer							
Installation of 200 mil Geonet (Labor)	350	HR	\$	1,500	\$	525,000	Engineer's Estimate Crew rate based on 20 equipment operators/site workers
Installation of 200 mil Geonet (Equipment)	350	HR	\$	225	\$	78,750	Engineer's Estimate Equipment rate based on 5 trucks, backhoe (CAT 446), gradeall (CAT 10k lb), loader (CAT 996) and fuel
Geonet materials: 6X6 comp	1,589,940	SF	\$	0.30	\$	476,982	Vendor Quote Composite-6ozX200mX2S
Landfill Gas Vents	10	EA	\$	2,600	\$	26,000	Engineer's Estimate
Clay Liner							
Geonet materials: GCL	1,589,940	SF	\$	0.38	\$	604,177	Vendor Quote Geosynthetic Clay Liner (GCL)
Installation of liner (Labor)	460	HR	\$	1,405	\$	646,300	Engineer's Estimate Crew rate based on 19 equipment operators/site workers
Installation of liner (Equipment)	460	HR	\$	210	\$	96,600	Engineer's Estimate Equipment rate based on 5 trucks, backhoe (CAT 446), gradeall (CAT 10k lb), loader (CAT 996) and fuel
Liner materials: HDPE liner	1,589,940	SF	\$	0.34	\$	540,580	Vendor Quote 60 mil smooth HDPE
Drainage Layer							
Liner materials: 6X6 Comp	1,589,940	SF	\$	0.25	\$	397,485	Vendor Quote 60ozx200mx1S
Miscellaneous Materials	1	LS	\$	11,000	\$	11,000	Engineer's Estimate Sand bags, visquene, bentonite, welding rods, etc.
Final Inspection	1	LS	\$	4,000	\$	4,000	Engineer's Estimate
						\$ 3,407,000	

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Non-RCRA Hazardous Waste Cap Construction									
Gas Collection Layer									
Installation of 200 mil Geonet (Labor)	44	HR	\$	1,500	\$	66,000	Engineer's Estimate	Crew rate based on 20 equipment operators/site workers	
Installation of 200 mil Geonet (Equipment)	44	HR	\$	225	\$	9,900	Engineer's Estimate	Equipment rate based on 5 trucks, backhoe (CAT 446), gradeall (CAT 10k lb), loader (CAT 996) and fuel	
Geonet materials: 6X6 comp	150,000	SF	\$	0.30	\$	45,000	Vendor Quote	Composite-6ozX200mX2S	
Landfill Gas Vents	6	EA	\$	2,600	\$	15,600	Engineer's Estimate		
Clay Liner	Installation of liner (Labor)	590	HR	\$	1,530	\$	902,700	Engineer's Estimate	Crew rate based on 20 equipment operators/site workers
	Installation of liner (Equipment)	590	HR	\$	195	\$	115,050	Engineer's Estimate	Equipment rate based on 3 trucks, backhoe (CAT 446), gradeall (CAT 10k lb), loader (CAT 996) and fuel
	Installation liner (Materials)	1,764,180	SF	\$	0.34	\$	599,821	Vendor Quote	60 mil smooth HDPE Liner
Drainage Layer	Installation liner (Materials)	1,764,180	SF	\$	0.30	\$	529,254	Vendor Quote	Composite-6ozX200mX2S
	Miscellaneous Materials	1	LS	\$	6,000	\$	6,000	Engineer's Estimate	Sand bags, visquene, bentonite, welding rods, etc.
	Final Inspection	1	LS	\$	4,000	\$	4,000	Engineer's Estimate	
							\$	2,293,000	
Landfill Vegetative Cover Soil Construction									
Cap Construction Soil Layer (Labor)	440	HR	\$	1,328	\$	584,100	Engineer's Estimate	Crew rate based on 8 equipment operators/site workers	
Cap Construction Soil Layer (Equipment)	440	HR	\$	760	\$	334,400	Engineer's Estimate	Equipment rate based on 4 scrapers (CAT 623), 3 CAT D6 dozers, grader (CAT 14G), water truck and fuel	
Cap Construction Soil Layer (Select Fill)	58,000	CY	\$	5.60	\$	324,800	Vendor Quote	Assume off-site source for 6 inch select cover = 58K cy	
Seeding	72	AC	\$	2,800	\$	201,600	Vendor Quote	Seed, mulch and install Excesior mat as required.	
							\$	1,445,000	

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Wetland Excavation/Consolidation/Creation (8.25 acres)							
Wetland Work (Labor)	220	HR	\$	545	\$	119,900	Engineer's Estimate
Wetland Work (Equipment)	220	HR	\$	395	\$	86,900	Engineer's Estimate
Select Fill	10,000	CY	\$	5.60	\$	56,000	Vendor Quote
Soil Testing	1	LS	\$	16,800	\$	16,800	Vendor Quote
Wetland Consultants	1	LS	\$	168,000	\$	168,000	Vendor Quote
SMHM Trap/Consulting	1	LS	\$	78,400	\$	78,400	Vendor Quote
Seed/Plant Collecting	1	LS	\$	84,000	\$	84,000	Engineer's Estimate
Seed/Plant Installation	1	LS	\$	28,000	\$	28,000	Engineer's Estimate
						\$	638,000
Institutional Controls							
Permanent Site Access Fencing	1	LS	\$	128,000	\$	128,000	
						\$	128,000
Plans							
Post Closure Monitoring Plan	1	LS	\$	50,000	\$	50,000	
						\$	50,000

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O&M Costs								
Monitoring Well Install/Mod/Maintenance	1	LS	\$	221,000	\$	221,000	Already conducted during Summer 2005 22 wells installed, 48 wells abandoned	
Five Years O&M Quarterly Monitoring	5	YR	\$	221,000	\$	1,105,000	Years 1 to 5 O&M (includes labor, analytical services) Based on Weston's 2005 WQ SAP	
Long Term O&M Quarterly Monitoring	25	YR	\$	221,000	\$	5,525,000	\$3,848,000*	Years 6 to 30 O&M (includes labor, analytical services) NPV Based on Weston's 2005 WQ SAP
Five Years Groundwater/Leachate Management	4,175,000	GL	\$	0.03	\$	125,250		Years 1 to 5 (labor, analytical and disposal)
Long Term Groundwater/Leachate Management	20,875,000	GL	\$	0.03	\$	626,250		Years 6 to 30 (labor, analytical and disposal)
Predator Control/Trapping	30	YR	\$	10,000	\$	300,000		Predator control - bating and trapping
Regulatory Oversight	8	YR	\$	50,000	\$	400,000		Years 1, 2, 5, 10, 15, 20, 25, 30
Regulatory Oversight	22	YR	\$	20,000	\$	440,000		Years 3, 4, 6-9, 11-14, 16-19, 21-24, 26-29
					\$	8,742,500		
					\$	7,066,000		
Report Sub-Total					\$	23,128,000		
25% contingency					\$	5,782,000		
Installation of containment barrier					\$	2,390,000		Cost of installed vertical barrier
Report Total					\$	31,300,000		

Costs provided for construction activities if conducted in 2006

Long Term O&M are not adjusted for inflation

*NPV: Net Present Value (3%)